B2.2 Organelles and compartmentalization

What the Cell · DP Biology · worksheet · SL statements B2.2.1–3

Name _____ **Date** _____ **Total** _____ / 24

About 25 minutes, or one section at a time. The number of marks shows how many separate points to make.

Section A: Recall

5 marks

1 **Define** organelle. B2.2.1 **[1]**

2 **State** two cell structures that are not organelles. B2.2.1 **[2]**

3 **Name** one organelle with two membranes and one with no membrane. B2.2.1 **[2]**

Section B: Understanding

9 marks

4 **Explain** the advantage of separating the nucleus and cytoplasm into compartments. B2.2.2 **[3]**

5 **Outline** two advantages of compartments in the cytoplasm. B2.2.3 **[2]**

6 **Explain** why digestive enzymes are kept inside lysosomes. B2.2.3 **[2]**

7 **Outline** how a phagocytic vacuole forms and what happens inside it. B2.2.3 **[2]**

Section C: Working with data

6 marks

All data in this section are invented for practice. The patterns are realistic.

8 B2.2.3

The pH inside a food vacuole of a unicellular organism was measured over time.

Time after food enters / min	0	5	10	20	40
pH inside the vacuole	7.0	4.5	3.0	6.5	7.5

a **Describe** the change in pH. **[2]**

b **Suggest** why this change would be damaging if it took place throughout the cytoplasm. **[2]**

c **Suggest** why different enzymes might act at different times in the vacuole. **[2]**

Section D: Longer answer

4 marks

9 **Explain** why eukaryotic cells with compartments can be more efficient than cells without them. B2.2.2, B2.2.3 **[4]**